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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,479	12/21/2001	G. Finn Wredenhagen	1020457-0021	4556

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EXAMINER

YENKE, BRIAN P

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,479

Applicant(s)

WREDENHAGEN ET AL.

Examiner

BRIAN P. YENKE

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE (18 Nov 05)/Amend (05 Oct 05).
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-6,8-12,14-21,23-27 and 29-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-12,14-21,23-27 and 29-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 Oct 05 has been entered.

Response to Arguments

Applicant's arguments filed 05 Oct 05 have been fully considered but they are not persuasive.

a) Applicant states that the structured difference is a more complicated method of generating field difference signals than a simple subtraction of pixel values. The structured difference generator is controlled by rules and user-defined thresholds that are used for deciding the types of image structure that are present. Applicant states that Rao does not suggest structural difference signals that indicate structural information as the terms are understood to a person of reasonable skill in the art.

b) Applicant states that although Rao detects whether an incoming signal is progressive or interlaced and modifies the signal appropriately, it does not disclose a programmable or user defined threshold.

c) Applicant states that Wredenhagen, 20020054236 does not disclose quantizing occurs against a series of programmable thresholds or how many (not necessarily which ones) of the quantized differences exceeds a predetermined threshold.

d) Applicant traverses examiner's "OFFICIAL NOTICE" pertaining to the detection of logos/text or subtitles in an image.

Examiner's Response

a) The examiner disagrees. As stated in the rejection, given the broadest interpretation of the claimed invention "structured difference signals indicative of structural information" where input processor 102 (Fig 3) of Rao (col 12, line 42-54) provides information relating to the field/frame and the odd/even polarity of the fields, thus providing the difference between frames/fields and the information indicative of the information (structure) of the signal.

b) The examiner disagrees. Initially it is noted that "user defined threshold" is not recited in the claims. The recitation of programmable threshold is still met by Rao, since Rao is able to ascertain based upon the input signals received, where the thresholds would have to vary in order to determine different type signals, and in order to generate the appropriate side channel information to select the appropriate vertical filter. If the thresholds didn't vary, the side channel information and vertical filters would remain identical for all input signals, which is clearly contrary to Rao's invention.

c) The examiner disagrees. Specifically (para 79-105) of Wredenhagen discloses quantizing occurs against programmable thresholds and if the differences exceed the threshold.

d) The examiner relies on previously incorporated Kuwano, US 6,366,699 which discloses the detection of telop characters (telop detection unit 2, Fig 1,2). This subject matter is also disclosed by Wredenhagen in the detection of subtitles.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2a. Claims 1, 4, 6, 8, 12, 18-19, 21,23 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Rao et al, US 5,828,786.

In considering claims 1, 4, 6, 8, 12, 18-19, 21, 23, 27,

a) the claimed a signal generator... is met by input processor 102 (Fig 3) which generates signals from the received camera 101.

b) the claimed a plurality of pattern detection state machines... is met by video stream analyzer 300 (Fig 3) which includes controller 402 (Fig 4a) which includes a plurality of state machines (Fig 5a/b) which detects the input signal (Appendix) and varies the output according to the display mode, where a variety of conversions between inputs/outputs can be provided (Appendix). The claimed preset threshold is met by the type of input and the desired output.

c) the claimed an arbiter state machine coupled... is met by video stream analyzer 300 which includes a statistical analyzer 401, reordering memory 403 both coupled to controller 402 (Fig 4A).

Regarding the detection of motion, Rao discloses that video stream analyzer detects the amount of motion in the received signal in order to determine whether field or frame filtering should be performed (col 13, line 4-21).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3a. Claims 2-3, 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao et al., US 5,828,786.

Considering claim 2,

Rao discloses the elimination duplicate fields in order to improve video signal for compression.

However, a deinterlacing algorithm which ignores redundant fields and deinterlaces by meshing is conventional in the art, as disclosed by applicant's admitted prior art AAPA (page 8, para 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention Rao which discloses the removal of redundant fields in order to improve compression, with AAPA by using a conventional technique which ignores the redundant fields in order to deinterlace the signal by meshing, which can be provide the user a suitable uncompressed deinterlaced signal.

Considering claim 3,

As disclosed above, based upon video stream analyzer 300 and what type of signals are detected and the desired output determines the deinterlacing algorithm.

Considering claims 5 and 20,

Rao does not explicitly recite the detection of a 2:2 pulldown pattern. However, Rao does disclose the use of 3:2 pulldown with the conventional NTSC signal.

The use of a 2:2 pulldown is performed when using the PAL signal, as disclosed by AAPA.

Thus, based upon the type of signal received (i.e. geographic location US is NTSC, overseas PAL), would determine whether to perform a 3:2 or 2:2 pulldown.

3b. Claims 9-11, 14-17, 24-26 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao et al., US 5,828,786 in view of Wredenhagen, 20020054236.

In considering claims 9-11 and 24-26,

Rao discloses the performance of motion compensation and also discloses that conventional motion compensation prediction is performed in the encoding process.

However, Rao does not explicitly recite how the motion is computed and the compensation performed based on the computed motion.

Conventional motion compensation is performed in an image in order to ascertain the differences (if any) between frames/fields of an image and whether there is motion in an image or artifacts which appears as differences between the detected frames/fields.

Thus the examiner incorporates Wredenhagen, 20020054236 (para 79-105) regarding a system which performs motion compensation by calculating differences between pixels in a field, quantizing the differences and determining whether the differences exceed a threshold.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rao which discloses image conversion from a received input format into a desired output performed, where Rao performs motion compensation and also eliminates any redundant fields to aid in the compression process, with Wredenhagen by also performing conventional motion compensation in order to even further reduce the size of the signal by eliminating those blocks/pixels in a field/frame which stay the same (no motion).

In considering claims 14-17, and 29-32,

Rao discloses a system which aids the encoder in the compression process by removing redundant/repeated fields, detecting scene cuts and mixed field frames.

However, Rao does not explicitly recite the detection of subtitles.

It is also conventional in the art to detect logos/text/subtitles in an image, since the addition of such items typically occur after the video frame has been created. This additional information would then produce unwanted effects, if not detected or removed from the video signal, since the detection between field/frames are based upon the video not the added items.

Wredenhagen does disclose the detection of subtitles (para 84).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rao, which discloses a system which receives a variety of input signals and provides a variety output signals, and also detects within the received signal repeated fields, scene cuts and mixed field frames in order to provide an ideally compressed signal with

Wredenhagen, by also detecting the additional information included in a signal, since the additional information is typically not part of the original signal and thus would preferably be detected/removed.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure—see newly cited references on attached form PTO-892.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (571) 272-7359. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (571)272-7353.

Any response to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(571)273-8300

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703)305-HELP.

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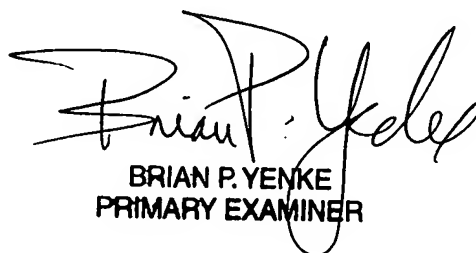
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B.P.Y.

01 December 2005



BRIAN P. YENKE
PRIMARY EXAMINER